

## **Abstract**

Disclosed is to provide a manufacturing method for polyester fine denier multifilament. The length of a protective delay shroud of the radial outer-flow quenching system used in melt spinning process for manufacturing fine hollow polyester filaments is expressed as  $(2 \sim 8060 \times \text{throughput} + \text{filaments square})$ , and the length of quenching air tube is from 15 to 40 centimeters. The velocity of quenching air is between 0.2 m/sec to 0.6 m/sec. For the layout of the spinneret orifices, the diameter difference of outermost layer orifice and the innermost layer orifice is set less than 20 mm; and the distance between the diameter of innermost orifice layout and the diameter of quenching air tube is at least 12 and less than 33mm. The orifice density of spinneret layout (orifice density) is set as 7~15 orifices per square centimeter.

The fine hollow polyester filaments produced in this invention has 0.3 to 2.5 denier per filament (d.p.f), uster half inert value ( $u\% \ 1 / 2 \text{ inert}$ ) less than 0.3%, variation of thermal stress in spindles less than 4%, hollow degree from 25 to 40%, after draw texturing process, fine hollow polyester yarn having d.p.f 0.2 to 1.0d, hollow degree 25 to 40% in excellent dyeability can be obtained.